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B1 } at least one baffle oriented substantially perpendicular to the longitudinal axis and disposed about said bundle and configured as a manifold to control a flow of said second fluid;

A1 at least one layer of interior thermal cement-bound refractory insulation disposed between said bundle and said housing and in fluid communication with said second fluid; and

at least one safety burst disk within said housing, wherein

each of said tubes comprises on the inside thereof at least one steam reformation catalyst and at least one water gas shift reaction catalyst.

17. (Amended) A method for making the heat exchange reactor according to Claim 1, comprising:

(a) preparing at least one tube bundle comprising the catalysts, a plurality of substantially parallel tubes and at least one baffle disposed about said bundle;

AX2 (b) mating a portion of said baffle to at least one sealing groove in a layer of thermal insulation; and

(c) contacting the insulation with the external pressure housing.

18. (Amended) A method for making the heat exchange reactor according to Claim 1, comprising:

(a) fabricating said housing;

(b) contacting at least one layer of the thermal insulation with the housing;

(c) mating a portion of at least one baffle to at least one sealing groove in the insulation to form an assembly fixture; and